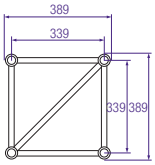
ST TOWER - HEAVY DUTY TOWER SYSTEM

Photo: Enttech, Greece. Project: Voala Beach, Athens.

The ST tower is based on S40T mast sections. These mast sections have one-sided horizontal bracing to facilitate safe and easy climbing of the towers, with the use of an appropriate fall protection system. The ST tower uses several sleeve blocks that combine all the trusses from the S and B Series. This makes it possible to fit any of the S Series trusses to all four sides by means of bolted female CCS7 couplers. The ST tower has a self-weight of 120 kg.
The ST sleeve block is a fully bolted structural element, making it much stronger and more precise than conventional welded versions.
The ST tower is a cost-effective investment. You need only purchase the special parts if you wish to expand your truss system with towers.
There is a structural relation between tower length and size. Additionally, the applied load and the method of restraining the tower base also contribute to determination of the total loading capacity. All these factors must be taken into consideration when determining the allowable load and tower length.



S40T - Series standard available lengths									
Meters	0,5	1,00	1,50	2,00	2,50	3,00	3,50	4,00	Avarage weight per meter = 10,3 kg
Feet	1.64	3.28	4.92	6.56	8.20	9.84	11.48	13.12	Avarage weight in pounds per feet = 6,93 LBS

S40T - Allowable loading

SPAN		Uniformly Distributed Load UDL		DEFLECTION		MAXIMUM ALLOWABLE POINT LOADS Centre Point Load CPL		DEFLECTION		Single Load Third Points Load per Point TPL		Single Load Fourth Points Load per Point QPL		Single Load Fifth Points Load per Point FPL		SPAN
m	ft	kg/m	lbs/ft	mm	inch	kgs	lbs	mm	inch	kgs	lbs	kgs	lbs	kgs	lbs	total weight
3	9,8	1532,2	1031,0	6	0,2	2857,8	6307,2	5	0,2	1835,6	4051,1	1473,6	3252,2	1149,2	2536,2	36
4	13,1	1146,5	771,4	10	0,4	2344,0	5173,2	8	0,3	1534,8	3387,4	1202,8	2654,7	1002,4	2212,2	48
5	16,4	765,9	515,4	16	0,6	1914,8	4226,0	13	0,5	1324,1	2922,2	957,4	2113,0	797,8	1760,8	60
6	19,7	528,6	355,7	23	0,9	1585,8	3499,8	18	0,7	1162,0	2564,5	792,9	1749,9	660,7	1458,3	72
7	23,0	385,5	259,4	31	1,2	1349,2	2977,7	25	1,0	1011,9	2233,3	674,6	1488,9	562,2	1240,7	84
8	26,2	292,6	196,9	41	1,6	1170,4	2583,2	32	1,3	877,8	1937,4	585,2	1291,6	487,7	1076,3	96
9	29,5	228,9	154,0	51	2,0	1030,2	2273,6	41	1,6	772,6	1705,2	515,1	1136,8	429,2	947,3	108
10	32,8	183,4	123,4	63	2,5	916,9	2023,6	51	2,0	687,7	1517,7	458,5	1011,8	382,0	843,2	120
11	36,1	149,7	100,7	77	3,0	823,2	1816,9	61	2,4	617,4	1362,7	411,6	908,4	343,0	757,0	132
12	39,4	124,0	83,5	91	3,6	744,3	1642,6	73	2,9	558,2	1232,0	372,1	821,3	310,1	684,4	144
13	42,6	104,1	70,0	107	4,2	676,7	1493,4	86	3,4	507,5	1120,0	338,3	746,7	281,9	622,2	156
14	45,9	88,3	59,4	124	4,9	617,9	1363,7	99	3,9	463,4	1022,8	309,0	681,9	257,5	568,2	168
15	49,2	75,5	50,8	143	5,6	566,3	1249,8	114	4,5	424,7	937,3	283,1	624,9	235,9	520,7	180
16	52,5	65,1	43,8	162	6,4	520,4	1148,6	130	5,1	390,3	861,4	260,2	574,3	216,8	478,6	192

1 inch = 25,4 mm | 1m = 3.28 ft | 1 lbs = 0,453 kg

- Tüv certification only valid for loading table above.
- Loading figures are only valid for static loads.
- Loading figures are only valid for single spans with supports at both ends.
- All static systems, other than single spans, need an individual structural calculation. Please contact a structural engineer or Prolyte Group for assistance.
- Loading figures are calculated according to and in full compliance with European standards (Eurocode).
- The self-weight of the trusses is already taken into account.
- Loading figures are only valid for the cross sectional orientation of the truss as shown by the icon in the loading table.
- The interaction between bending moment and shear force at the connection point is already taken into account.
- Truss spans can be assembled from different truss lengths.
- Read the manual before assembling, using and loading the truss.

Technical Specifications - S40T	
Types	tower truss
Alloy	EN AW 6082 T6
Main Tubes (Chords)	50x4
Braces	25x3
Coupling System	CCS6

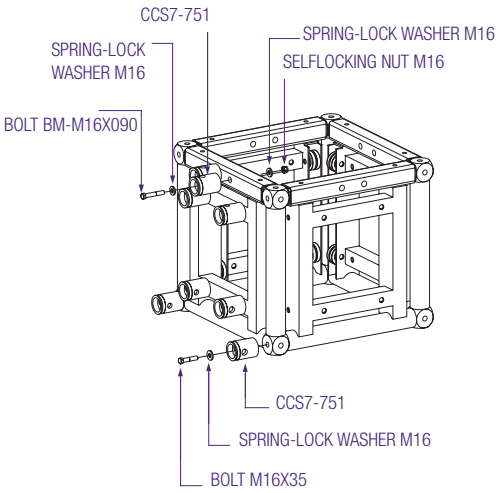
Structural data can be found at www.prolyte.com

Technical specifications - ST Tower	
max. height	depends on structure and tower lenght
max. loading capacity*	2000 kg**
type mast sections	S40T
sleeve block suitable for truss-series	S36R•V, S52F•V, S66R•V, S100F and B100RV (with various sleeve blocks)
alloy alu parts	EN - AW 6082 T6
main tubes mast sections	50 x 4mm
braces mast sections	25 x 3mm
coupling system tower	CCS6 - Serie
self weight	120kg

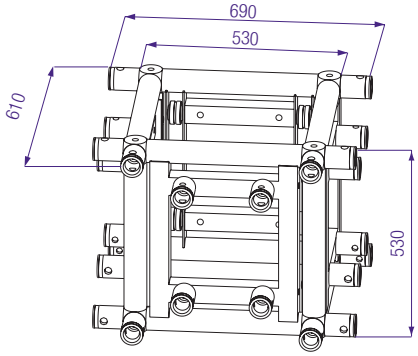
*** To be used with chainhoist only.**

**** There is a structural relation between tower height and size, further the applied load and the method of restraining the tower base and top also have its influence on the total loading capacity. All these factors must be taken into consideration when determining the allowable load.**

More information can be found in the Prolyte BlackBook.

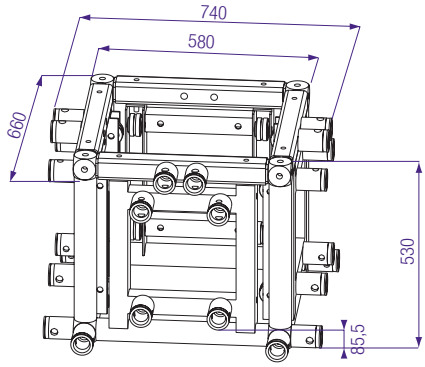


ST - 010



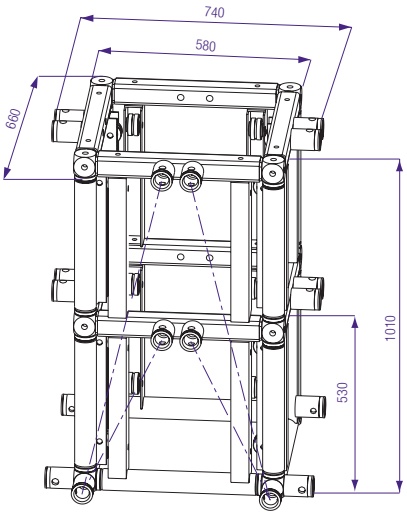
ST - 010 - 4 - 52V/36R

Sleeve block for S36R and S52V



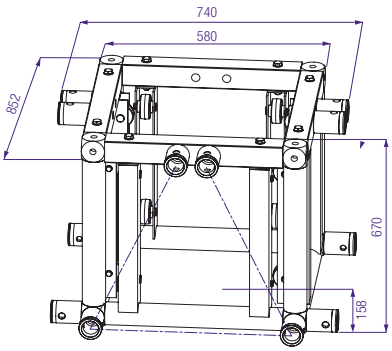
ST - 010 - 4 - 52F/36R

Sleeve block for S36R and S52F



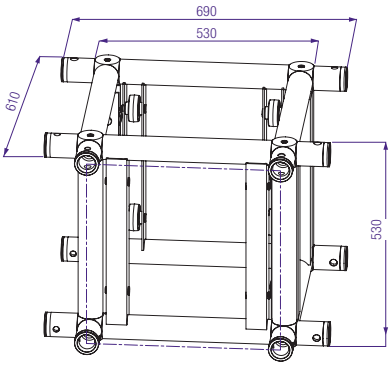
ST - 010 - 4 - 100F/52F

Sleeve block for S52F / S100F / B100RV.



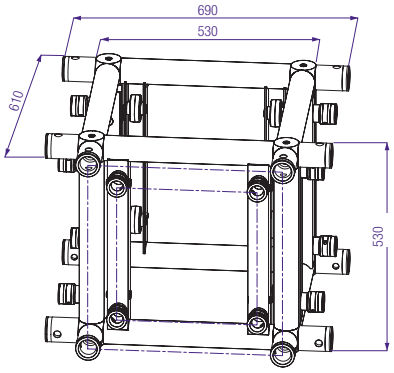
ST - 010 - 4 - 52F

Sleeve block for 52F.



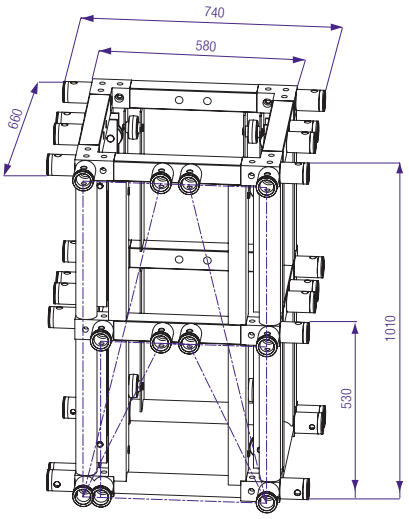
ST - 010 - 4 - 52V

Sleeve block for 52V.



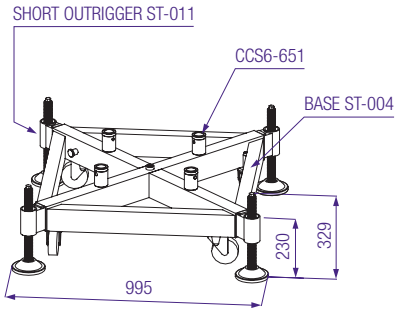
ST - 010 - 4 - 52V / 40V

Sleeve block for S52V-40.



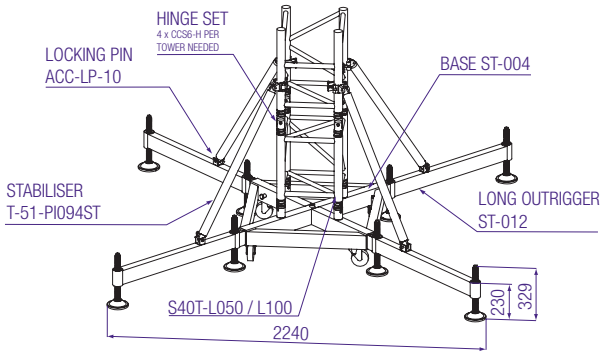
ST - 010 - 4 - 100 - 52

Sleeve block for 100RV / S100F / S52F / S52V.



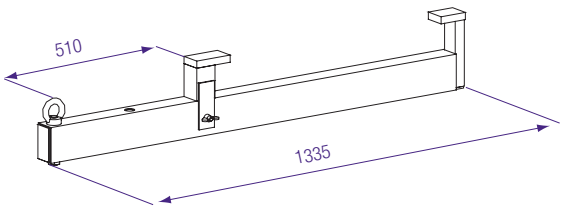
ST-004

Base with ST-011 short outriggers



ST-004

Base with ST-012 long outriggers



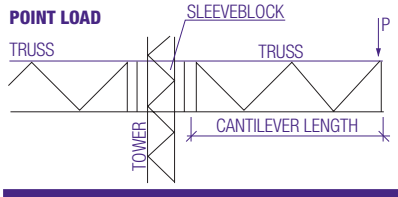
ST - 041

ST Motor attachment. WLL 1000 kg.

ST - 010 Sleeve Block - Allowable cantilever load

Length (L)	S52V/SV P (kg)	S52F P (kg)	B100RV P (kg)	S100F P (kg)
1	1565	833	3773	1040
1,5	1321	716	3356	976
2	1140	626	3020	918
2,5	1001	556	2651	865
3	890	472	2356	816
3,5	800	389	2115	771
4	724	324	1991	727
4,5	660	271	1744	632
5	605	226	1598	554
5,5	557	188	1470	487
6	515	153	1358	429

POINT LOAD

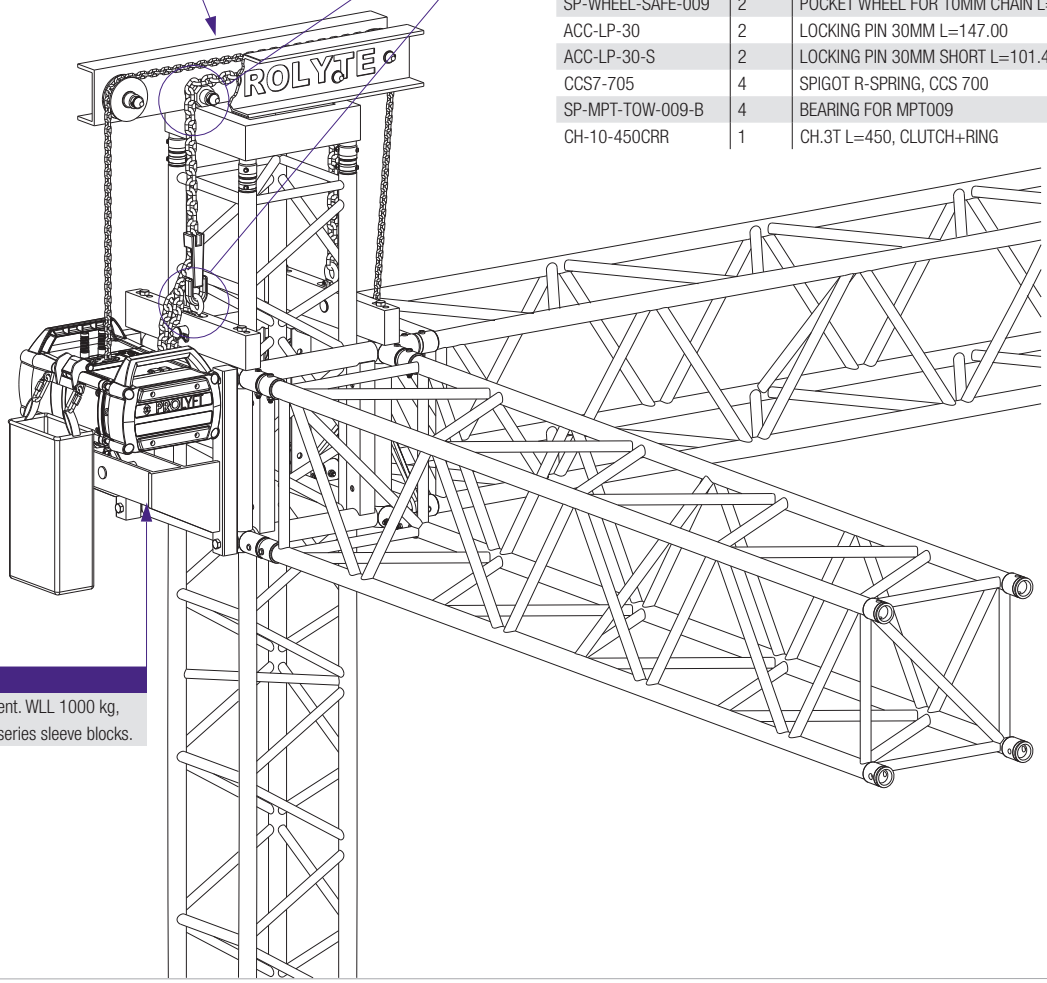


ST - 009

Top section with added wheels for optimal dead hang position (optional available) Pully suitable for 6, 7 and 8mm chain.

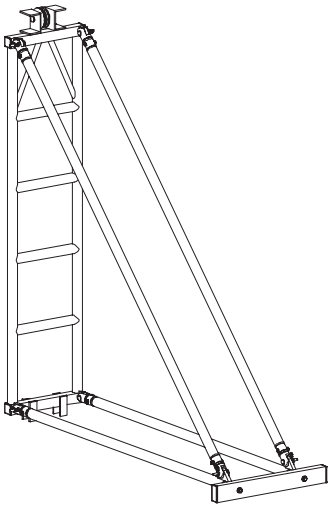
ST Safe

Code	Pieces	Description
ST-010-SAFE	2	SLEEVEBLK,SAFETYBAR,S52/100
BM-M16x120	4	BLT M16X120 8.8 DIN931
BM-M16-SW	4	WSHR M16 SPRNG DIN127B
SP-WHEEL-SAFE-009	2	POCKET WHEEL FOR 10MM CHAIN L=46.00
ACC-LP-30	2	LOCKING PIN 30MM L=147.00
ACC-LP-30-S	2	LOCKING PIN 30MM SHORT L=101.40
CCS7-705	4	SPIGOT R-SPRING, CCS 700
SP-MPT-TOW-009-B	4	BEARING FOR MPT009
CH-10-450CRR	1	CH.3T L=450, CLUTCH+RING



ST - 042

ST Motor attachment. WLL 1000 kg, available for all S-series sleeve blocks.



ST-HELP erecting system

The ST-HELP can be used to erect the ST towers.
Use with a 1ton electrical chain hoist.
Attach to truss by means of a ratchet strap. Read the manual first!

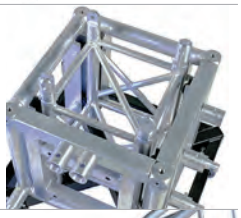
ST TOWER - HEAVY DUTY TOWER SYSTEM

1 The black coated, steel base (ST-004) is equipped with 4 castors and four female couplers (CCS6-651) for attachment of the mast section. In most cases, the first mast section can be 50 cm long; however, when S66 or S100 truss is used in the grid a mast section of 100 cm should be used. The base can be used with either short outriggers (ST-011) or long outriggers (ST-012).

2 To secure the outriggers within the base, a trigger pin is placed on the inside of the base frame. Pull the pin outwards when mounting the outriggers.

3 The ST tower can only be used with a chain hoist. The hoist can be attached in two ways (please see pictures 7 and 8).

4 Disassemble the hinge set, mount the half hinges to both mast sections (S40T truss). Male and female connections should be mounted diagonally (as shown in the picture), in order to facilitate the erection of the mast.



5 A completely mounted hinge set. First locate the hinge pins on one side. The truss now works as a hinge and can be erected easily. Then locate the remaining hinge pins on the other side to fix the mast into position. Per tower 4 x CCS6-H are needed (hinge set MPT•ST tower). Only use CCS-604ST spigot pints to connect the mast sections, to prevent damage to your sleeve block and the risk of getting “stuck”.

6 Unscrew the screw jacks in the outriggers, making sure that the castors of the base are free of any load. The complete load of the base should be supported by the screw jacks. Level the base by adjusting the screw jacks. The base must be perfectly level before the mast is erected. Long outriggers are needed for structures with three towers or less.

7 To use the ST tower in combination with a chain hoist, ProlyteStructures provides the motor attachment (ST-041). This supplementary component can be attached to the base and has a fixing point for the chain hoist hook. WLL 1000 kg.

8 Chain hoists can be attached by use of the motor attachment (ST042). Chain hoists can also be mounted to the grid and sleeve block.

9 ProlyteStructures advises that during storage and transportation the ST towers are mounted as an assembly of the following components; base section, 50 cm mast section, sleeve block and top section. This combination ffacilitates fast, efficient loading and building of the towers (size 80 x 80 x 120cm, weight +/- 120 kg).

ST BALLAST FRAME

The ballast frame ST-005 is designed to offer a safe, engineered and easy solution for your ballast requirements. These aluminium frames are simply mounted between the long outriggers of your ST- or MPT base section. Layher screw spindles are placed at the outside for optimum levelling each ballast frame. The system doesn't require any tooling. Standard, pallet-sized water tanks fit on the resulting platforms to create your ballast weight.

HOW TO USE THE BALLAST FRAME

The ballast frames should be used only in conjunction with long outriggers and stabiliser braces. All ballast frames and ballast should be positioned symmetrically. For any other needed set-ups, please contact our engineering department. The amount of ballast required for a structure is dependent on the outcome of structural analysis. Due to deflection of components not all applied ballast can be activated. The outsides will stay grounded, while the area around the tower will have the tendency to tip or be lifted (see drawing example).

MPT-005 SPECIFICATIONS	
Weight	ST-005: 29,15 kg/frame
Article Code:	ST-005 St ballast frame 1350kg
Additional items required:	2 x ACC-SPIN-LAY/60-60 SCREWJACK per frame are needed.